

REMARKS

The preceding amendments and following remarks are submitted in response to the Office Action mailed June 7, 2006, setting a three month shortened statutory response ending September 7, 2006. With this Amendment, claim 1 has been amended and claims 4 and 5 have been cancelled. Claim 25 was previously cancelled. Claims 1-3, 6-24 and 26-39 remain pending in this application. All of the pending claims have been rejected. Reconsideration, examination and allowance of all pending claims are respectfully requested.

Amendments to the Claims

Claim 1 has been amended in order to include some of the limitations of claims 4 and 5. Claim 22 was also amended in order to correct a typographical error; the claim now refers to an atomizer rather than an aspirator. Applicant asserts that amended claims 1 and 22 are allowable for the reasons presented below.

35 U.S.C. § 102 Rejection

Claims 1, 4, 34 and 35 have been rejected under 35 U.S.C. §102(b) as being anticipated by Arbisi, U.S. Patent No. 4,909,936. Applicant respectfully traverses this rejection. In order for a reference to anticipate a claim, each and every element of the claim must be present in the reference. See M.P.E.P. §2131. Specifically, claim 1 has been amended in order to include a forced air source that is in fluid communication with a tubular drive shaft. Arbisi does not disclose such a drive shaft or forced air source. Because all elements of claim 1 are not present in Arbisi, this reference cannot anticipate this claim. Because they are dependent on claim 1 and because they contain additional patentably distinct elements, Applicant asserts that claims 4, 34 and 35 are also patentable over Arbisi.

35 U.S.C. § 103 Rejections

Claims 2, 3, 5, 9 and 10 were rejected under 35 U.S.C. §103(a) as being unpatentable over Arbisi in view of PCT application Publication No. WO 02/38510 to Henley (hereinafter "Henley"). Applicant respectfully traverses this rejection. In order

for a combination of references to render a claim obvious, there must be some motivation or suggestion in the prior art to make the proposed combination. See M.P.E.P. §2143.01. Applicant asserts that the motivation to combine these references is not present.

Amended claim 1, which contains some of the limitations of cancelled claims 4 and 5, recites, in part, a tubular drive shaft, a first propeller, a submergible vortex plate adjustably disposed above the first propeller, and a forced air source, wherein the forced air source is in fluid communication with the tubular drive shaft. In the Office Action, Figures 2, 6 and 7, along with column 3, lines 4-52 of Arbisi were cited, in combination with Henley, as disclosing the combination of elements of amended claim 1.

However, Figure 2 of Arbisi does not apparently have a vortex shield, much less an adjustable one. As discussed in prior responses, Henley is also missing such an adjustable vortex shield. Thus, Figure 2 of Arbisi in combination with Henley does not contain all of the elements of claim 1.

Turning to Figures 6 and 7, these figures disclose an extensive apparatus for mixing the air and the water in order to effectively aerate the water. Specifically, as shown in Figure 8, it appears as though the air is introduced to the water through an air distribution screen 85. Column 3, lines 9-22 states:

The housing 80 is spaced outwardly from housing 60 to define an annular air flow passage there between. An air discharge opening is provided around a lower circumferential [sic] portion of the housing 60 and an air distributor screen 85 is provided through which air is discharged under pressure into the annular flow passage 72 for mixing the finely divided air with the accelerated water flowing through the passage. The air distributor screen 85 extends around approximately 120 degrees of the circumference of housing 60 and the screen has openings not to exceed a size of 2 mm. to insure that the discharged air is divided into small bubbles for maximum mixing with high velocity water flowing through the passage 72.

According to this citation, Arbisi apparently discloses a system for effectively mixing the air and the water through a housing 80 that has a screen 85 in it. Using such a system appears to break up the air bubbles in order to make more of the air dissolve into the water.

It is well established that a reference cannot be modified in such a way that will change the principle of operation of the reference. See M.P.E.P. §2143.01, Part VI. In this case, modifying Arbisi to have the air introduced through the propeller drive shaft

would effectively bypass the air/water mixing system of Arbisi, and in the process would change the principle of operation of the reference.

If Arbisi were modified to introduce air through a hollow drive shaft, the air would not be introduced around the housing 80 and through the screen 85. The screen 85 would not be able to break the air up into small bubbles before introducing the air to the high-velocity water. In other words, the principle of operation for mixing the air and water would be entirely changed. As stated in M.P.E.P. §2143.01, Part VI, "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." As such, this combination cannot be used to render amended claim 1, or dependent claims 2, 3, 9 and 10, obvious.

In addition, Applicant believes that claims 2 and 3 are patentable for an additional reason. These claims recite a vortex plate with a plurality of holes and a vortex plate that comprises a grill. It was stated in the Office Action that it would have been obvious to provide the vortex plate of Arbisi with a multitude of small holes, "since such would insure against any cavitating current by insuring a calmed, perhaps laminar flow of liquid through the small holes of the vortex shield plate, as suggested by the secondary reference." See paragraph 4 of the Office Action (emphasis added). Applicant respectfully disagrees with this statement.

From the above quotation, it appears as though the Examiner is asserting that the secondary reference suggests that adding holes to a vortex shield will increase the effectiveness of the vortex shield. However, Applicant cannot find anything in Henley (the secondary reference) that makes such a statement. In fact, the only place where such a statement can be found is in the current application, which states: "By providing a vortex shield which includes holes, the ability of the vortex shield to prevent vortices is increased over a shield having a smooth, regular surface. If the vortex shield has holes, it may be advantageous to make the holes relatively small, numerous, and closely spaced." See paragraph [0023] of the published application. It is well established that motivation for combining references must come from the prior art, and not from the current application. Using motivation found in the current application would be an impermissible use of hindsight. See M.P.E.P. §2145, Part X. In this case, because there

is no motivation in the cited prior art, and because it appears as though the motivation was taken from the specification of the current application, Applicant asserts that the rejection of claims 2 and 3 is improper, and that these claims are allowable over these references for this additional reason.

Applicant also asserts that claims 9 and 10 are patentable for an additional reason. Claim 9 recites, in part, a plurality of floats and claim 10 is dependent on claim 9. In paragraph 4 of the Office Action, it is stated: "it would have been obvious for an artisan at the time of the invention, to mount the aerator of Arbisi on a self-leveling float/frame...since such would allow for the use of the device within deep liquid bodies, far from the edges or shores thereof."

Applicant respectfully asserts that there is no motivation for combining Arbisi and Henley as proposed. Again, as stated in M.P.E.P. §2143.01, Part VI, "if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious." In the Abstract of Arbisi, it is stated:

This is a water aerating unit which is particularly adapted for aerating bodies of water adjacent the shoreline and is readily transportable from one location to another. A suitable transporting vehicle is provided such as a tractor having a power take-off and hydraulic system for providing the driving power water for the propeller as well as the air blower mounted on the unit. The unit is supported on a wheeled frame by which the elevation of the lower submerged end thereof may be adjustably varied by a hydraulic system. (emphasis added)

From this citation from Arbisi, it appears as though the aerator of Arbisi is specifically focused on applications of aerating adjacent the shoreline. The Arbisi aerator is on a trailer so that it can easily be transported around a body of water. Further, the Arbisi aerator also has a system for attaching to a power take-off (PTO) on a tractor or truck that is on the shoreline. Placing the aerator on a float away from the shoreline would appear to make such a connection to a PTO impossible. As such, the principle of operating and using the aerator would be altered if Arbisi were placed on a float away from the shoreline. Because the proposed modification would change the principle of operation of Arbisi, this proposed combination cannot be used to render claims 9 and 10 obvious.

For at least the above reasons, the Applicant asserts that there is no motivation to combine the references as proposed, and that claims 2, 3, 9 and 10, and amended claim 1, are allowable over these references.

Claims 5-24, 26, 27, 29-33 and 36-39 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Arbisi in view of Karliner, U.S. Patent No. 5,744,072.

Applicant respectfully traverses this rejection. In order for a combination of references to render a claim obvious, there must be some suggestion or motivation in the prior art to make the proposed combination. See M.P.E.P. §2143.01.

As mentioned above, there is no motivation or suggestion in the prior art to modify Arbisi in order to include a forced air source that is in fluid communication with the drive shaft. As such, Applicant asserts that claim 1 is allowable over the cited combination of references. Because they are dependent on claim 1 and because they contain additional patentably distinct elements, Applicant also asserts that claims 6-21 are allowable.

In addition, claims 9-19 are allowable for additional reasons. With respect to claim 9, as mentioned above, there is no motivation to provide a float system for the aerator of Arbisi. The aerator of Arbisi is intended to be used along the shoreline of a body of water, and it is to be used with a PTO. Putting a float on the aerator of Arbisi and placing it away from shoreline would change the principle of operation, as argued above. As such, claims 9 and 10 are allowable over Arbisi and Karliner.

Claim 11 recites, in part, an atomizer disposed at the second end of the drive shaft. It was apparently asserted in the Office Action (see page 4 of the Office Action) that it would have been obvious to add an atomizer to the shaft of Arbisi. The Applicant disagrees with this assertion. As explained above, Arbisi contains an extensive apparatus for mixing the air into the water, including a housing 80 with a distributor screen 85. In contrast, Karliner discloses the atomizer at the end of the shaft as helping to mix air that is being introduced through the lumen of the shaft. Because the atomizer of Karliner appears to be a part of the air/water mixing system of Karliner that introduces air through a hollow shaft and, as stated above, there is no suggestion or motivation to use this hollow shaft system in Arbisi, there is no suggestion or motivation for Arbisi to include the atomizer of Karliner. As such, this combination of references cannot be used to

render claim 11 obvious. Because they are dependent on claim 11 and because they contain additional patentably distinct elements, the Applicant also asserts that claims 12-16 are allowable for this additional reason.

With respect to claim 17, it is apparently asserted on page 4 of the Office Action that it would have been obvious to run the aerator drive shaft at the "rather unremarkable speed of between 700 and 1000 rpm." The Applicant disagrees with this statement. As stated in paragraph [0010] of the published application, speeds in this range are actually extremely low speeds for aerators. In some cases, the combination of elements of claim 17 apparently allows for a much lower speed to be used, in the process saving energy. The range is not "unremarkable" as asserted in the Office Action, and this range is not disclosed in either of the cited references. Because all elements of claim 17 are not disclosed in the cited combination of prior art, the principles contained in M.P.E.P. §2143.03 would not allow this combination to be used to render this claim obvious. Because they are dependent on claim 17, Applicant also asserts that claims 18 and 19 are allowable over these references.

Further, independent claim 22 recites, in part, a forced air source fluidly connected to the drive shaft. Again, there is no motivation to modify Arbisi to include a forced air source that is fluidly connected to the drive shaft (see the arguments above). Further, as mentioned above, the relatively low speed range of 700-1000 rpm is not disclosed in these references. In addition, also as mentioned above, it would not be obvious to add an atomizer to the end of Arbisi. Because all elements of claim 22 are not disclosed in the combination of Arbisi and Karliner, and because there is no motivation to combine these references, Applicant asserts that claim 22 is allowable over these references. Because they are dependent on claim 22 and because they recite additional patentably distinct elements, Applicant also asserts that claims 23, 24, 26, 27, 36 and 37 are allowable over these references.

Claim 29 recites, in part, providing a fluid agitator that has two propellers and an atomizer, immersing the first propeller, and operating the power source at a selected speed between 700 and 1000 rpm. As mentioned above, neither of the cited references disclose the relatively low speed range of 700 to 1000 rpm. Because all elements of claim 29 are not disclosed in the cited combination of references, this combination cannot

render this claim obvious. In addition, also as mentioned above, there is no motivation or suggestion to provide Arbisi with an atomizer, and as such this combination of references cannot be used together to render claim 29 obvious. Because they are dependent on claim 29 and because they contain additional patentably distinct elements, Applicant also asserts that claims 30-33, 38 and 39 are allowable over these references.

Applicant also asserts that claims 30 and 31 are allowable for the following additional reasons. Claim 30 recites, in part, providing a forced air source fluidly connected to the drive shaft. As mentioned above, there is no motivation or suggestion in the cited prior art to modify Arbisi with a forced air source connected to the drive shaft. As such, this claim cannot be obvious for this additional reason.

Claim 31 recites, in part, operating the atomizer to create a vacuum at the open end of the drive shaft. There is no motivation or suggestion in the cited prior art to provide a vacuum at the end of the drive shaft of Arbisi because, as mentioned above, Arbisi operates in a significantly different manner, and adding a hollow shaft and creating vacuum would change the principle of operation of Arbisi. As such, this claim cannot be obvious in light of the cited references.

Claim 28 has been rejected under 35 U.S.C. §103(a) as being unpatentable over Arbisi in view of Karliner, and further in view of Henley. Applicant respectfully traverses this rejection. In order for a combination of references to render a claim obvious, there must be some suggestion or motivation in the prior art to make the proposed combination. See M.P.E.P. §2143.01.

As mentioned above, there is no motivation or suggestion in the prior art to combine Arbisi with Karliner, and as such claim 22 is allowable over these references. Because there is no motivation to make the proposed combination of Arbisi and Karliner, the proposed combination of Arbisi, Karliner and Henley cannot render claim 28 obvious. Further, as mentioned above, there is no motivation or suggestion in the prior art to modify the vortex plate of Arbisi with multiple holes, as shown in Henley. For at least these reasons, Applicant respectfully asserts that claim 28 is allowable over these references.

Reexamination and reconsideration are respectfully requested. It is submitted that all pending claims are currently in condition for allowance. Issuance of a Notice of

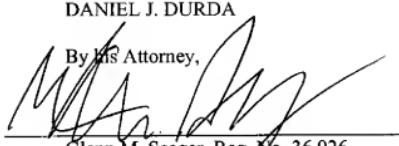
Allowance in due course is anticipated. If a telephone conference might be of assistance, please contact the undersigned attorney at 612-677-9050.

Respectfully submitted,

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By His Attorney,

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